Claims

1. A fuel injection system for internal combustion engines, including a high-pressure part and a low-pressure part, in which in the high-pressure part, fuel from a fuel container is delivered to a high-pressure reservoir (5) via a high-pressure pump (4) and a high-pressure line (32), and injectors (7) are supplied from the high-pressure reservoir (4) via high-pressure supply lines (6), and in the low-pressure part the injectors (7) communicate via injector return lines (8) with a low-pressure reservoir (9), and in the low-pressure reservoir (9) by means of a pressure holding valve (11), a pressure of $\leq$ 50 bar is maintained, and at a pressure in the low-pressure reservoir (9) above the opening pressure of the pressure holding valve (11), the fuel is returned to the fuel container via a return line (12), characterized in that the low-pressure reservoir (9) communicates with the high-pressure line (32) of the high-pressure part via an overflow valve (15) and an overflow line (33).

2. The fuel injection system of claim 1, characterized in that when the high-pressure part is pressure-relieved, the overflow valve (15) is opened.

3. The fuel injection system of claim 1, characterized in that when a closing pressure that is below the opening pressure of the pressure holding valve (11) is reached, the overflow valve (15) is closed by action of the fuel that is compressed by means of the high-pressure pump (4).

4. The fuel injection system of one or more of claims 1 through 3, characterized in that the overflow valve (15) contains a valve spring (24), whose spring force F is equivalent to the force exerted on the overflow valve (13) by the closing pressure.

5. The fuel injection system of one or more of claims 1 through 4, characterized in that the overflow valve (15) includes a low-pressure chamber (28), which communicates with the return line (12) via a leak fuel line (35).

6. The fuel injection system of one or more of claims 1 through 5, characterized in that the injectors (7) are piezoelectrically controlled.

7. The fuel injection system of one or more of claims 1 through 6, characterized in that the pressure in the low-pressure reservoir (9) is $\leq$ 10 bar.